

Exhibit I

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

HITACHI, LTD., and UNISIA)	
NORTH AMERICA, INC.,)	
)	
Plaintiffs,)	C.A. No. 05-048-SLR
)	
v.)	
)	
BORGWARNER, INC., and)	
BORGWARNER MORSE TECH,)	
INC.,)	
)	
Defendants.)	

Steven J. Balick, Esquire, and John G. Day, Esquire, of ASHBY & GEDDES,
Attorneys for Plaintiffs Hitachi, Ltd. and Unisia North America, Inc.

Richard K. Herrmann, Esquire, and Mary Matterer, Esquire, of MORRIS JAMES
HITCHENS & WILLIAMS, Attorneys for Defendants BorgWarner, Inc. and
BorgWarner Morse Tech, Inc.

**DECISION ON PLAINTIFFS' MOTION TO COMPEL
THE PRODUCTION OF WITHHELD PROSECUTION DOCUMENTS**

Collins J. Seitz, Jr., Special Master

I. PROCEDURAL HISTORY

On March 13, 2006, Plaintiffs Hitachi, Ltd. and Unisia North America, Inc. (collectively “Hitachi”) filed a Motion to Compel the Production of Withheld Prosecution Documents based on the crime-fraud exception to the attorney-client privilege (“Motion”). On April 3, 2006, BorgWarner, Inc. and BorgWarner Morse TECH, Inc. (collectively “BorgWarner”) filed an Opposition to the Motion (“Opp.”). Hitachi filed a Reply on April 12, 2006 (“Reply”) and BorgWarner filed a Sur-reply on April 20, 2006 (“Sur-Reply”). Hitachi filed a Sur-Sur Reply on May 3, 2006 (“SS Reply”).

Both BorgWarner and Hitachi suggested that the documents at issue be reviewed *in camera*. After consideration of the parties’ submissions and *in camera* review of the contested documents, for the reasons that follow, Hitachi’s Motion is denied.

II. THE ‘738 PATENT

United States Patent No. 5,497,738 (the “‘738 Patent”) issued on March 12, 1996, from an application filed with the PTO on May 3, 1993. The ‘738 Patent is a continuation-in-part of United States Patent No. 5,218,935 (the “‘935 Patent”) which was filed on September 3, 1992. The inventors of the ‘738 Patent are Edward C. Siemon and Stanley B. Quinn. Although Greg Dziegielewski is listed

on the patent as the prosecuting attorney, it appears that David Spenard was the attorney primarily responsible for the prosecution of the '738 Patent application.

By way of background, a camshaft is a cylindrical rod running the length of the bank of piston cylinders in an internal combustion engine. The camshaft has lobes (cams) that operate the opening and closing of the piston cylinder valves. The valves control intake and exhaust, and therefore must be opened and closed at the proper time during the piston stroke. The camshaft can be connected by gears directly to the crankshaft (the rod connecting the pistons together that powers the car), or indirectly connected to the camshaft by a belt or chain, to control the opening and closing of the valves in synchronization with the pistons.¹

In conventional camshaft systems, the camshaft rotates in a fixed relationship to the crankshaft, and is not adjusted for differences in engine speed and operating conditions. A variable camshaft timing ("VCT") system is an improvement to fixed camshaft control systems. VCT is a means of controlling the engine valves by allowing the camshaft to be "phased" or "timed" relative to the crankshaft. In a variable camshaft timing system, the relationship between the camshaft and crankshaft is adjusted based on engine operation. When the camshaft is adjusted to engine speed and operation, the benefits are increased fuel economy, power improvement, lower emissions, and improved idle quality.

¹ <http://en.wikipedia.org/wiki/Camshaft>

A hydraulic mechanism on the camshaft uses oil pressure to rotate or phase the camshaft as engine conditions change. A “spool” controls the flow of oil to the chambers that drive the hydraulic mechanism.² By varying the spool position, the spool regulates the oil flowing between the hydraulic chambers (and therefore the camshaft position). The spool position can be controlled in different ways, one way being a spring and solenoid combination.

A solenoid is a device that takes an electromagnetic field and converts it into a mechanical or hydraulic output.³ The ‘738 Patent, titled *VCT Control With A Direct Electromechanical Actuator*, describes a VCT system in an automobile that uses a variable force solenoid to operate a vented spool valve. The variable force solenoid can vary the position of the spool valve (as opposed to a conventional solenoid that would only permit the spool to assume two positions), and eliminates the need to use engine oil to supply the hydraulic pressure necessary to operate the spool valve. The spool valve adjustment is done electromechanically using the variable force solenoid which receives input from the vehicle’s electronic control unit, which monitors various engine parameters. The electronic control unit controls the spool position, which controls the hydraulic mechanism on the

² A spool is a hydraulic valve consisting of a cylindrical member inside a cylinder sleeve that alters the hydraulic flow depending on spool position. Nov. 14, 2005 Butterfield Dep. pp. 28-29.

³ Nov. 14, 2005 Butterfield Dep. p. 27.

camshaft, which controls the phase of the camshaft, which controls the cylinder valves. Motion Ex. 4, at col. 2, lines 57-59; col. 3, lines 1-5.

III. THE '738 PROSECUTION HISTORY

During prosecution, the Examiner rejected all pending claims in light of United States Patent No. 5,172,659 ("Butterfield '659"),⁴ and the Linder, Strauber and Hendrixon prior art patents.⁵ The Examiner determined that Butterfield '659 disclosed the basic features of BorgWarner's VCT system, including a vane, housing, spool valve, various return lines, and a lever arm to actuate the spool valve -- the same basic features disclosed in the '738 patent. The Examiner found that Linder disclosed a solenoid valve and closed-loop feedback control; and Strauber taught the use of a solenoid to operate the spool in a VCT system. Motion at 17, Ex. 19, at BW 002156-58; 002190-92. The Examiner also cited Hendrixon as generally showing a variable force solenoid. According to the Examiner, the combination of these teachings rendered the invention obvious.

The Examiner also cited United States Patent No. 5,218,935 (the "'935 Patent"), assigned to BorgWarner, and raised double patenting and obviousness issues. The '935 Patent disclosed a stepper motor⁶ to control the spool in a VCT

⁴ Roger Butterfield is the named inventor on many VCT "base" system patents.

⁵ Linder – U.S. Patent No. 5,056,477; Strauber – U.S. Patent No. 5,012,774; Hendrixon – U.S. Patent No. 5,000,420.

⁶ A stepper motor is an electric motor that can operate in "steps," meaning that the motor can position the spool in different positions depending on the electrical signal supplied to the motor. http://en.wikipedia.org/wiki/Stepper_motor

system. In response to the double patenting objection, BorgWarner terminally disclaimed a portion of the patent term for the '738 Patent. Motion, Ex. 19, '738 Terminal Disclaimer at BW 002139-40.

In both the first prior art rejection in January, 1994, and in the PTO Board of Appeals, BorgWarner agreed with the Examiner that Butterfield '659 disclosed the basic VCT system,⁷ but argued that "nothing suggests using a lever arrangement in combination with a variable-force solenoid to amplify the force applied to the spool valve."⁸ BorgWarner distinguished Linder and Strauber on the basis that these references taught the use of torque reversals and a "common ('on-off' only) solenoid to control the spool of a two position only system." In contrast, according to BorgWarner, the invention disclosed in the '738 Patent application "utilizes a variable force solenoid to control the position of a spool in a continuously variable system." Motion Ex. 19, at BW 002157-58; 002191. BorgWarner agreed that the Hendrixon reference "does teach a variable force solenoid to control fluid flow, but in no way expected the problems of an engine oil pressure dependent system."⁹ Finally, BorgWarner argued that there was no motivation for one skilled in the art to combine the foregoing references.¹⁰

⁷ In the PTO Board of Appeals proceedings, BorgWarner disputed the Examiner's characterization of the lever arrangement used to actuate the spool valve described in Butterfield '659. BW 002190.

⁸ BW 002194 (underlining omitted).

⁹ BW 002194.

¹⁰ BW 002192.

The '738 Patent ultimately issued after "[a]greement was reached that 'variable force solenoid' is allowable." Motion, Ex. 19, Interview Summary at BW 002362.

IV. THE PARTIES' CONTENTIONS

Hitachi asserts that the crime-fraud exception to the attorney-client privilege vitiates BorgWarner's privilege claims with respect to documents on BorgWarner's privilege log relating to prosecution of the '738 Patent.¹¹ Hitachi claims that individuals associated with BorgWarner fraudulently withheld two references from the PTO during prosecution of the '738 Patent – (1) a 1991 article by Roger Butterfield entitled *A Unique Approach to Design Of A VCT Mechanism* (the "Butterfield Article"), Motion Ex. 11; and (2) United States Patent No. 5,361,735 (the "'735 Patent"), Motion Ex. 5. (collectively "References").¹²

Hitachi alleges that the References contradict several of BorgWarner's arguments in favor of patentability made to the Examiner to obtain allowance of the '738 Patent. According to Hitachi, BorgWarner argued that the invention disclosed in the '738 Patent application was patentable because it included certain features that were not contained in the prior art references relied upon by the

¹¹ Documents identified on Defendants' privilege log at Exhibit 3 of the Motion, as well as documents identified on the Brinks Hofer log, are subject to Hitachi's motion. Brinks Hofer prosecuted the '738 Patent. During the relevant time-frame, the law firm was known as Willian Brinks Olds Hofer Gibson & Lione. Hitachi concedes that the documents at issue are covered by the attorney-client privilege.

¹² Hitachi does not claim that the '738 Patent inventors engaged in any fraudulent conduct.

Examiner. Hitachi asserts that the features at issue were disclosed in the References withheld by BorgWarner, and that the BorgWarner representatives substantively involved in the prosecution of the '738 Patent appreciated the materiality of the References, and intentionally withheld them from the PTO. But for the withholding of the References, according to Hitachi, the '738 Patent would not have issued.

BorgWarner responds that neither Roger Butterfield nor Thomas Meehan, two of the individuals accused of withholding the References, owed a duty of candor to the PTO, nor appreciated the materiality of the References to the '738 Patent application. BorgWarner further contends that Hitachi has failed to establish the requisite elements of "fraud" to trigger the crime-fraud exception in the patent prosecution context. Specifically, BorgWarner argues that Hitachi has failed to make the necessary showing that the References were material, that anyone with a duty of candor had the requisite intent to deceive the PTO, and that the '738 Patent would not have issued "but for" the withholding of the References.

V. THE LEGAL STANDARD – The Crime-Fraud Exception to the Attorney-Client Privilege in the Patent Prosecution Context

The attorney-client privilege protects the confidentiality of communications between attorney and client when the communications are made for the purpose of obtaining legal advice. *Upjohn Co. v. United States*, 449 U.S. 383, 396 (1981); *In re Echostar Commc'ns Corp.*, 448 F.3d 1294, 1300 (Fed. Cir. 2006); *Genentech*,

Inc. v. Int'l Trade Comm'n, 122 F.3d 1409, 1415 (Fed.Cir. 1997). The privilege will be abrogated, however, where a party has engaged in criminal or fraudulent conduct. To establish the crime-fraud exception, the challenging party must make a *prima facie* showing that the privileged communications were made in furtherance of a crime or fraud. *In re Spalding Sports Worldwide, Inc.*, 203 F.3d 800, 807 (Fed. Cir. 2000).

In the patent prosecution context, a *prima facie* showing of inequitable conduct is insufficient to establish the crime-fraud exception to the attorney-client privilege. *Id.* at 807. Instead, a *prima facie* showing of common law fraud requires “higher threshold showings of both intent and materiality than does a finding of inequitable conduct.” *Id.* (quoting *Nobelpharma AB v. Implant Innovations, Inc.*, 141 F.3d 1059, 1070 (Fed. Cir. 1998)), and “must be based on independent and clear evidence of deceptive intent together with a clear showing of reliance....” *Id.* (quoting, *Nobelpharma*, 141 F.3d at 1071)).

Where fraud is based upon a failure to cite references to the United States Patent and Trademark Office (“PTO”), the party challenging the attorney-client privilege must show that a person with a duty of disclosure to the PTO made a knowing, willful and intentional omission; that was material; and that the PTO relied on this omission in deciding to issue the patent. *Union Carbide Corp. v. Dow Chemical Co.*, 619 F. Supp. 1030, 1052 (D. Del. 1985), *accord Vardon Golf*

Co., Inc. v. Karsten MFG. Corp., 213 F.R.D. 528, 536 (N.D. Ill. 2003); *W.R. Grace & Co. v. Viskase Comp.*, No. 90C 5383, 1991 WL 150188, at *1-*4 (N.D. Ill. July 30, 1991). The “reliance” element of fraud requires that the patent would not have issued “but for” the omission. *See, Marusiak v. Adjustable Clamp Co.*, No. 01C 6181, 2002 WL 31886834, at *2-*4 (N.D. Ill. Dec. 27, 2002); *Union Carbide Corp. v. Dow Chemical Co.*, 619 F. Supp. 1036, 1052 (D. Del. 1985). The “materiality” element in this context requires a showing that either a “reasonable examiner” would have considered such prior art important in deciding whether to allow the patent application, *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1363 (Fed. Cir. 2003), or that the reference satisfied the PTO’s materiality standard. *Digital Control Inc. v. Charles Mach. Works*, 437 F.3d 1309 (Fed. Cir. 2006).¹³

To establish a *prima facie* showing of fraud, Hitachi need not conclusively prove fraud or submit direct evidence of intent. *In re Spalding Sports Worldwide, Inc.*, 203 F.3d at 808. A mere failure to cite a reference to the PTO, however, will

¹³The PTO materiality standard provides:

[I]nformation is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

- (1) It establishes, by itself or in combination with other information, a *prima facie* case of unpatentability of a claim; or
- (2) It refutes, or is inconsistent with, a position the applicant takes in:
 - (i) Opposing an argument of unpatentability relied on by the Office, or
 - (ii) Asserting an argument of patentability . . .

37 C.F.R. § 1.56(b) (2004).

not suffice to make a *prima facie* showing of fraud. *Id.* (Citing *Nobelpharma*, 141 F.3d at 1071.)

Regarding the duty of disclosure, 37 C.F.R. § 156(c) imposes a duty to disclose material information to the PTO upon all persons “associated with the filing and prosecution of a patent application.” This includes the inventor, attorneys prosecuting the application, and anyone “substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee, or with anyone to whom there is an obligation to assign the application.” *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1178 (Fed. Cir. 1995). The duty may extend to persons who are not the inventors, and has been extended to supervising attorneys and corporate employees. *Bresseler, U.S.A.I., L.P. v. Stryker Sales Corp.*, 267 F.3d 1370, 1381-84 (Fed. Cir. 2001) (supervising attorney); *Digital Equipment Comp. v. Diamond*, 653 F.2d 701, 720, n. 25 (1st Cir. 1981) (corporate employee); *Buildex, Inc. v. Kason Indus.*, No. CV-82-418, 1989 WL 42500, at *2-*4 (E.D.N.Y. April 18, 1989) (duty extended to engineer having primary responsibility for patent activities.).

VI. DUTY OF CANDOR TO THE PTO

A. Roger Butterfield

Mr. Butterfield is not an inventor of the ‘738 Patent. Accordingly, for a duty of disclosure to arise, Mr. Butterfield must have been substantively involved in the

preparation of the '738 Patent application or its prosecution. Absent substantive involvement, Mr. Butterfield cannot be charged with inequitable conduct, let alone common law fraud. *See, Poly-America, Inc. v. Serrot Int'l, Inc.*, No. Civ. A. 300CV1457D, 2002 WL 1996561 at *2 (N.D. Tex. Aug. 26, 2002) (granting motion for summary judgment of no inequitable conduct where evidence did not show that anyone substantively involved in prosecution of the patent-in-suit committed inequitable conduct).

Mr. Butterfield started with BorgWarner in 1977, and with the exception of one brief hiatus, has been employed by BorgWarner since.¹⁴ From 1992-1995, Butterfield had responsibility for BorgWarner's entire camshaft timing drive, the production systems, and variable camshaft timing. Motion Ex. 6, at 19. One of his duties during the relevant time was to ensure that BorgWarner obtained appropriate patent coverage for all aspects of its VCT Systems. Motion Ex. 6, at 50-51; Motion Ex. 7, at BW 005170. Butterfield monitored "all VCT related patent work" and personally maintained a list of BorgWarner's issued VCT patents. *See* Motion Ex. 8, at BW 00131433, 00131485.

In many instances, Butterfield substantively participated in VCT applications even though he was not a named inventor. And, where the technology in issue comprised a so-called "prime directive" of BorgWarner's, Butterfield

¹⁴ Nov. 14, 2005 Butterfield Deposition pp. 11-12.

“would work together between myself, potentially other managers, or involved people, the inventor and outside counsel to come up with the best response which includes legal and technical responses to whatever the office action said.” Motion Ex. 6, at 158-59, 169-70; *see also Id.* at 161-62. Butterfield stated that development of a variable force solenoid was designated a “prime directive” for BorgWarner during the relevant time frame (1991 to 1992), and that Butterfield would normally be involved in the prosecution of patents involving prime directives. Motion Ex. 6, at 162-63. Thomas Meehan, BorgWarner’s outside counsel with Brinks Hofer, confirmed Butterfield’s general participation at BorgWarner in pending patent matters. When the attorney needed assistance from BorgWarner, Butterfield was oftentimes his point of contact, depending on the importance of the issue. Motion Ex. 9, at 67.

At the relevant time, BorgWarner internally divided its VCT technology into two categories: mechanical patents and electronic or control system patents. According to BorgWarner, although Butterfield played a substantive role in the prosecution of many VCT patents, he did not always play such a role with respect to all of the control system-related patents. While inventors generally consulted with Butterfield before filing a patent application, “sometime the control-related ones would be submitted without [his] specific knowledge.” Opp. Ex. A, at 50-51.

Hitachi has shown that BorgWarner's general business practices might suggest that Butterfield had some contact with the '738 Patent application, or individuals involved with its prosecution. Having the advantage of *in camera* review, however, I am convinced that, while Butterfield was aware of the '738 prosecution, there is insufficient evidence to demonstrate that he was substantively involved in either the preparation of the application or its prosecution. None of the documents reviewed *in camera* revealed any substantive involvement by Butterfield. Accordingly, Butterfield did not owe a duty of candor to the PTO in connection with the '738 Patent application.

B. Thomas Meehan and David Spenard

In the early to mid-1990's, Thomas Meehan was BorgWarner's main outside prosecution counsel for VCT technology. He was a partner at Brinks Hofer and worked closely with David Spenard, then an associate at Brinks Hofer firm. The record establishes that Meehan and Spenard had a close working relationship and that it was Meehan's practice to review Spenard's work product for both form and substance. Motion Ex. 9, at 27-29; Reply Ex. 10, at 29-30. Meehan testified that, consistent with his standard practice, he would have reviewed Spenard's draft of the '738 Patent application for both form and substance. *Id.* at 130-31. Mr. Spenard confirmed this working arrangement. Supp. Ex. 10, at 29-30. Mr. Meehan testified, however, that he had no specific recollection of providing

substantive assistance in connection with the prosecution of the '738 Patent. Opp. Ex. C, at 166. Similarly, Mr. Spenard had no recollection of Mr. Meehan providing substantive assistance with respect to the '738 Patent application. Opp. Ex. B, at 81.

Hitachi relies on Brinks Hofer's general practices and certain privilege log entries to demonstrate Mr. Meehan's substantive involvement in the '738 prosecution. Hitachi points to privilege log descriptions of correspondence from Meehan to Spenard, Butterfield, and Greg Dziegielewski¹⁵ regarding "preparation of '738 patent application," and claims that Meehan was substantively involved with the '738 Patent application.

Based on Meehan's general practices as corroborated by Spenard, and having the advantage of *in camera* review of the challenged documents, I find that Mr. Meehan owed a duty of candor to the PTO in connection with the '738 Patent prosecution. A review of those documents convinces me that Meehan had sufficient substantive participation in the prosecution of the '738 Patent application and that a duty of candor was owed to the PTO.

Finally, David Spenard, the attorney at Brinks Hofer "primarily responsible" for the '738 prosecution, unquestionably owed a duty of candor to the PTO as BorgWarner agrees. Opp. at 9, n. 8.

¹⁵ Mr. Dziegielewski was BorgWarner's in-house counsel at the time, but does not appear to have been substantively involved in the '738 Patent application or its prosecution.

VII. THE REFERENCES

A. On the Present Record the Article and '735 Patent are Prior Art¹⁶

1. The Article

BorgWarner argues that the Article would not have been available to the public until September 17, 1992 (when entered into a library card catalogue), four months later than necessary to qualify as prior art, and therefore there was no duty to disclose the Reference to the PTO. Opp. at 11. Title 35 U.S.C. § 102 provides, in pertinent part, that a reference is prior art if:

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States. . . .

To qualify as prior art under § 102(a), the Article must have been published before BorgWarner invented what is claimed in the '738 Patent, or under § 102(b) more than one year before the effective filing date - May 3, 1992. See Opp. at 10.

The current record is muddled concerning when the Article was available to the public. The Article appears to have followed or may have been distributed as part of a September, 1991 public presentation at the Institute of Mechanical

¹⁶ As Hitachi correctly notes, the only conclusive determination of whether the Article constitutes prior art under § 102 will be made by the finder of fact on a complete record.

Engineers (“IMechE”) in London, England on camshaft technology. BorgWarner contends that a 30(b)(6) witness for IMechE, Mr. Claxton, did not provide sufficient testimony to establish that the Article was either distributed to attendees or placed on IMechE’s shelves shortly after the seminar. According to BorgWarner, although IMechE’s 30(b)(6) witness provided general testimony on how the library operated and how items were cataloged, he did not testify when the Article was actually received by the IMechE library, when it was actually placed on the shelves, or when it was actually cataloged. Opp. at 12. Nor did he provide testimony that the Article was distributed to a single person. *Id.* BorgWarner essentially argues that the library’s general business practices were not followed because the 30(b)(6) witness did not have personal knowledge of actual distribution of the Article to attendees, or recollection of cataloging the Article some fifteen years ago. Finally BorgWarner argues that the Article was not actually catalogued until September, 1992, after the bar date. Opp. Ex. H.

IMechE has a separate library section for seminar materials, which include the articles presented at seminars from the mid-1980s to the present. Motion Supp. Ex. 14, at 29-31 and Ex. 29, at 39-49. The seminar materials are organized on the shelves by the year of the seminar and alphabetized within each year. *Id.* The 1991 seminar papers on “camshafts” are put on the shelves with papers for all other seminars from that same year, and indexed under the letter “C.” *Id.* Mr.

Claxton testified that in 1991 seminar articles typically were placed on the shelves “a few days after we’d received the seminar” and would be indexed in the card catalogue system. Motion Ex. 29 at 31-32; 72. Motion Supp. Ex. 14, at 31-32. The seminar papers were also routinely distributed to attendees. Motion Ex. 29, at 49.

Although no one with first-hand knowledge testified about the precise date the Article was cataloged or whether it was distributed, routine business practices are probative to show the performance of a specific act. *In re Hall*, 781 F.2d 897, 899 (Fed. Cir. 1986). On the present record and for purposes of this Motion only, Hitachi has adduced sufficient evidence to establish that, even though the Article may not have appeared on the library card catalogue until 1992, the Article would most likely have been distributed in accordance with IMechE’s business practices to seminar attendees and would have been accessible to the public on the library shelves within a few days after the seminar in September 1991. It therefore qualifies as prior art under 102(b).¹⁷

2. The ‘735 Patent

BorgWarner argues that the ‘735 Patent was not prior art pursuant to § 102(e)(2) because the inventors of the ‘738 Patent conceived of the use of a stepper motor as an actuator for a VCT system before the ‘735 Patent application was

¹⁷ Given the § 102(b) determination, it is unnecessary to resolve the disputed § 102(a) issues of the date of conception and diligent reduction to practice.

filed. According to BorgWarner, it would be able to antedate the '735 Patent with an affidavit under 37 C.F.R. § 1.132, and would also be able to demonstrate actual reduction to practice. Hitachi counters that BorgWarner's evidence of conception does not show conception of all the elements of the claimed invention before April 16, 1992 – the date the '735 Patent was filed. Hitachi also argues that BorgWarner has not demonstrated actual reduction to practice.

Conception and reduction to practice are intensely factual issues, usually resolved on a more complete record. Hitachi has presented enough evidence of record for me to assume, however, only for purposes of this Motion, that the '735 Patent qualifies as prior art under 15 U.S.C. § 102(e)(2).

B. The Materiality of the Butterfield Article

Mr. Butterfield drafted the Article for the IMechE seminar, and understood that the Article would eventually be made public. Motion, Ex. 11; Ex. 12 at 137-38.¹⁸ Phillip Mott presented the Article at the seminar. The presentation included slides and lasted about thirty minutes. Motion Ex. 12, at 123-24, 139. The Article accompanying the presentation states in pertinent part:

Control System

The method of moving the spool valve with hydraulic pressure and springs is just one way to control the VCT device. Other methods could include a linear proportional solenoid, stepper motor, vacuum,

¹⁸ Butterfield testified that, prior to 1993, he had never seen the final version of the Article. Opp. Ex. N, at 397.

or alternative hydraulic arrangements. If continuous control of the VCT mechanism is not required for a particular engine, then a simple on/off mechanical solenoid could be used.

Motion Ex. 11, at 2.

Hitachi argues that the Article is material because the description of the alternative VCT control systems allegedly contradicts several arguments advanced by BorgWarner in the PTO to obtain allowance of the '738 Patent. According to Hitachi, the Article (a) contradicts BorgWarner's argument that use of a variable force solenoid valve was not disclosed in the prior art as part of a VCT system, (b) refutes BorgWarner's argument that the concept of a continuous VCT system was patentable, and (c) refutes BorgWarner's argument that there was no motivation to combine Butterfield '659 with the teachings of Linder, Strauber and Hendrixon. As discussed below, Hitachi has adduced sufficient evidence to demonstrate only for purposes of this Motion that the Article would have been material.

1. The Article Discloses a Variable Force Solenoid

In support of its materiality argument, Hitachi relies upon BorgWarner's statements to the Examiner that the Linder and Strauber references were limited to a "common ('on-off' only) solenoid" rather than variable force solenoid.¹⁹ Motion Ex. 19, at BW 002155-62; Ex. 12, at BW 002184-204. In response to

¹⁹ In general, an on-off solenoid moves the spool only to two positions, depending on whether the solenoid is activated. A continuous VCT utilizing a variable force solenoid allows the VCT to achieve many different phase positions between some minimum and maximum values. Motion at 18, n.8.

BorgWarner's argument, the Examiner cited Hendrixon which generally taught a variable force solenoid. BorgWarner argued against combining these references with Butterfield '659, maintaining that the Hendrixon reference did not disclose use of a variable force solenoid as part of a VCT system, and that there was no suggestion in the art to do so. Motion Ex. 19, at BW 002194.

According to Hitachi, while BorgWarner was making these arguments, those "associated" with the '738 prosecution knew that the Article taught the use of a "variable force solenoid" as part of a VCT system. Motion at 19. Hitachi contends that the term "linear proportional solenoid" used in the Article includes or is synonymous with a "variable force solenoid" under the PTO claim interpretation standard. The PTO claim interpretation standard requires that patent application claims be given their broadest reasonable construction during prosecution. *See In re Am. Acad. of Science Tech. Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004) (holding that claims are construed more broadly during prosecution than "in connection with determinations of infringement and validity") (citation omitted).²⁰

BorgWarner argues that the Article does not disclose the use of a "variable force solenoid" in connection with a VCT system. As BorgWarner correctly points

²⁰ PTO Rule 1.56 also refers to the PTO claim interpretation standard: "A *prima facie* case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability."

out, nowhere in the Article does it mention “variable force solenoid.” Instead the Article uses the term “linear proportional solenoid.” According to BorgWarner, Mr. Butterfield did not view “linear proportional solenoid” necessarily identical to “variable force solenoid.” Mr. Butterfield testified during his deposition:

A. “Linear proportional solenoid is to where the output of the solenoid reacts in an essentially linear manner to the input signal. To me linear is redundant to proportional.”

* * * * *

Q. If your using a proportional solenoid to act on a spool, do you consider that a variable force solenoid?

A. It could be a variable force solenoid, but not necessarily. Could be a proportional hydraulic solenoid that acts on a spool so proportional solenoid is not by definition only a variable force.

Opp. Ex. A at 27-30.

In light of Mr. Butterfield’s acknowledgment that a linear proportional solenoid *could be* a variable force solenoid, I find only for purposes of this Motion that the Article discloses a variable force solenoid used in conjunction with a VCT system.²¹ Therefore, the Article may have been material to the Examiner on this point.

²¹ I express no opinion on the meaning of claim terms in the context of the ‘738 Patent. I find only for purposes of this Motion that “linear proportional solenoid” could be a “variable force solenoid” under the PTO claim interpretation standard.

2. The Continuously Variable VCT Disclosure is Cumulative of Art Before the Examiner

During the '738 Patent prosecution, BorgWarner argued that the Strauber and Linder References did not teach a continuously variable VCT system but rather characterized these References as “on-off” or “two position only” devices. Motion Ex. 19 at 002191. The Article explains that “[b]ecause the VCT mechanism allows continuous control of camshaft angle phase, a feedback loop is required so that the ECU is constantly informed of the actual camshaft position.” Motion Ex. 11 at 4. In addition, the Article contrasts “continuous” from “two position” control. *Id.* at 3.

BorgWarner does not dispute that the Article discloses a continuously variable VCT system. Instead, BorgWarner argues that continuously variable systems were already known in the art and that the '738 Patent relied on the disclosure of a prior BorgWarner patent for disclosure of continuous, closed-loop systems. Motion Ex. 4, at col. 3, lines 13-16 (“The preferred embodiment employs a closed-loop feed back system, such as the one disclosed in U.S. Pat. No. 5,184,578”). According to BorgWarner, the Article is merely cumulative on this point. I find only for purposes of this Motion that the concept of a continuously variable VCT system was before the Examiner in light of the disclosure made by BorgWarner during prosecution, and that the Article would have been merely cumulative of the art already before the Examiner on this point. *See Scripps Clinic*

& Research Foundation v. Genetech, Inc., 927 F.2d 1565, 1582-83 (Fed. Cir. 1991) (“A reference that is simply cumulative to other references does not meet the threshold of materiality that is a predicate to a holding of inequitable conduct.”).

3. The Article Suggests Combining a Variable Force Solenoid With a VCT System

Hitachi argues that the Article contradicts BorgWarner’s argument to the PTO that there was no motivation to combine the Strauber, Linder and Hendrixon References with ‘659 Butterfield. Motion Ex. 19, at BW 002158 and BW 002194. (“In short, applicants respectfully submit, to combine four references and a general engineering principle without some suggestion of doing so is improper.”). According to Hitachi, the Article combines a variable force solenoid, continuous VCT, and a closed-loop control into the base VCT system disclosed in the Butterfield ‘659 Patent -- the same base system that BorgWarner argued could not be combined with Linder and Strauber. Notwithstanding the fact that BorgWarner may have been focused on the problems solved by the invention claimed in the ‘738 Patent application, I find only for purposes of this Motion that the Article discloses these features in combination with BorgWarner’s base VCT system, and may contradict BorgWarner’s argument that there was no motivation in the art to combine these features. Simply stated, the Article places all these features in combination with a VCT system, and consequently would have been material to a reasonable examiner.

Hitachi further contends that the disclosure in the Article of a stepper motor to control a spool in a VCT system was *prima facie* material because the Examiner had already concluded that the claims of the '738 Patent were obvious over similar claims to a VCT system using a stepper motor. Motion at 20; Motion Ex. 19, at BW 002137 and 002147. Specifically, BorgWarner filed an application in September 1992, directed to a VCT system that matured into United States Patent No. 5,218,935 ("935 Patent"). The '935 Patent application named the same inventors, Siemon and Quinn, as the '738 Patent. The Examiner found that claims in the '738 Patent application to a VCT system using a variable force solenoid were obvious over claims in the '935 Patent application directed to a VCT system using a stepper motor to control the spool. Motion Ex. 19, at BW 002137 and 002147. To overcome the objection, the Examiner required BorgWarner to disclaim a portion of the '738 Patent term. *Id.* In light of the Examiner's previous disposition of this issue, I find only for purposes of this Motion that the Article would have been material because of the disclosure of the stepper motor used to control the spool in a VCT system.

Finally, BorgWarner argues that even if Hitachi's contentions are correct, the Article is merely cumulative of the art that was before the Examiner. According to BorgWarner, the Article would not be more relevant than the Hendrixon article which taught a variable force solenoid. However, Hendrixon's

disclosure was not made in combination with a VCT system. Taking into account that the Article combines a number of other features claimed in the '738 Patent and puts them together in a VCT system, I find only for purposes of this Motion that the Article as a whole is not cumulative of the art before the Examiner. As explained in *Semiconductor Energy Lab. Co., Ltd. v. Samsung Elec. Co.*, 204 F.3d 1368, 1374 (Fed. Cir. 2000), "A withheld reference may be highly material when it discloses a more complete combination of relevant features, even if these features are before the patent examiner in other references." *See also, Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1363-64 (Fed. Cir. 2003).

In sum, I find only for purposes of this Motion that the Article would have been "material" to a reasonable examiner because it discloses a variable force solenoid within the context of a VCT system; it also discloses a stepper motor within the context of a VCT system, and it may refute several arguments made by BorgWarner to obtain issuance of the '738 Patent.

C. The Materiality of the '735 Patent

Hitachi contends that the '735 Patent application would have been material to the Examiner evaluating the '738 Patent application. The application leading to the issuance of United States Patent No. 5,361,735 (the "'735 Patent'") was filed in April 1992, more than a year before the '738 application. The '735 Patent issued in November 1993, while the '738 Patent was being prosecuted. Thomas Meehan

signed at least one submission on behalf of BorgWarner in connection with the prosecution of the '735 Patent. Motion Ex. 26, at BW 005165-005172.

The '735 Patent teaches the use of a stepper motor as the electromechanical actuator to control the position of the spool – the same feature, according to Hitachi, which BorgWarner used to distinguish the '738 Patent application from the prior art. The direct electromechanical actuator is used in combination with a vent for relieving oil pressure on the other end of the spool. Motion Ex. 12, at 189-90. In its appeal brief in support of its '738 Patent application, BorgWarner stated as follows to distinguish the Hendrixon reference:

[C]lose inspection of the Hendrixon et al. patent reveals that there is engine oil pressure acting on the land of the spool. . . . Clearly there is engine oil present in cavity 84 at control pressure which acts on spool land 62 and counteracts the force of the solenoid on spool land 60.... By utilizing a direct electromechanical actuator on one land of the spool in combination with relieving the oil pressure on the other land, the present invention provides a solution to problems not expected by Hendrixon et al. . . .

Motion Ex. 19, at BW 002193.

BorgWarner contends that the '735 Patent was not material because the same Examiner handled both the '738 and '735 prosecutions, and he did not reference the '735 Patent in his patentability analysis of the '738 Patent. In addition, according to BorgWarner, each of the claims of the '738 Patent is limited to a variable force solenoid, and therefore claims a different invention from the '735 Patent. Opp. at 26.

What the Examiner might have known or assumed about a reference is difficult to discern. Furthermore, the claim limitations in the '738 Patent do not change the fact that the '735 Patent (1) taught a stepper motor in a VCT system which had previously raised obviousness issues with the Examiner in the '738 prosecution; and (2) called into question the basis upon which BorgWarner distinguished the Hendrixon reference during the '738 Patent prosecution. I therefore find only for purposes of this Motion that the '735 Patent would have been material.

VIII. HITACHI HAS FAILED TO DEMONSTRATE PRIMA FACIE EVIDENCE OF FRAUDULENT INTENT

The inventors of the '738 Patent have not been accused of fraudulent conduct, and Butterfield did not owe a duty of candor to the PTO during the '738 Patent prosecution. Therefore, only Meehan and Spenard, the attorneys involved with the '738 Patent prosecution, remain accused of fraudulent actions. The record before me falls short of a *prima facie* showing of intent necessary to invade the attorney-client privilege.

A. Meehan had Knowledge of the Article but No Deceptive Intent²²

The record establishes that Meehan first became aware of the Article in August 1993 while defending Butterfield's deposition during the so-called Melchior interference.²³ Opp. Ex. C, at 150; Motion at 27. The Article was marked as an exhibit during the deposition of Mr. Butterfield. At the time, Meehan was substantively involved in prosecuting at least two VCT control patents on behalf of BorgWarner - the '735 and '738 patents.

There is no evidence, however, that Meehan at the time appreciated the distinction between a "variable force solenoid" and a "linear proportional solenoid." When asked about the Article, Meehan testified that he neither recalled doing anything with the Article following Butterfield's deposition, nor making any inquiry of BorgWarner about the IMechE presentation. Motion Ex. 9, at 144-47. Meehan further testified that he "didn't recognize [the Article] as having any prior art pertinence." Opp. Ex. C, at 151. This is entirely credible, given the fact that Butterfield testified during the Melchior interference that the Article pertained to the U.S. Patent No. 5,002,023 – the subject of the interference. Opp. Ex. N, at 397.

²² I have previously determined that Butterfield did not owe a duty of candor to the PTO. It is therefore unnecessary to address whether Butterfield's actions would be sufficient to meet the crime-fraud exception to the attorney-client privilege. I would note, however, that based on the record, arguments of counsel, as well as *in camera* review, I do not believe that Hitachi has established a *prima facie* case of fraud based on Butterfield's conduct. David Spenard did not know the Article existed until he prepared for his deposition in the instant case, and therefore could not have a fraudulent intent to conceal the Article. Opp. Ex. B, at 172-73.

²³The Melchior interference involved a Butterfield patent, United States Patent No. 5,002,023, which discloses an analogous base VCT system.

At the time of the events in issue, Meehan was an experienced patent practitioner and BorgWarner's main outside VCT prosecution counsel. Mr. Meehan was substantively involved in the prosecution of the '738 Patent and, as such, owed a duty of candor to the PTO. It is not enough, however, to rely on the attorney's years of experience and involvement with the prosecution. On the present record, and considering the documents reviewed *in camera*, Hitachi has failed to make a *prima facie* showing that Meehan either appreciated the materiality of the Article to the '738 Patent prosecution, or that a reasonable inference from the facts of record might lead to a conclusion that Meehan intended to withhold the Article from the PTO.

B. Meehan and Spenard had Knowledge of the '735 Patent Application but No Deceptive Intent

There is an established duty to disclose material co-pending patent applications to the PTO. *Golden Valley Microwave Foods, Inc. v. Weaver Popcorn Co.*, 837 F. Supp. 1444, 1474-76 (N.D. Ill. 1992), *aff'd*, 11 F.3d 1072 (Fed. Cir. 1993). *See also MPEP* § 2001.06(b). As attorneys substantively involved in the prosecution, Meehan and Spenard owed a duty of candor to the PTO. It appears undisputed that both attorneys were aware of the '735 Patent application because they were involved in its prosecution. Motion Ex. 9, at 111-12; 137-38. And, as stated previously, for purposes of this Motion only, I have

concluded that the '735 Patent application would have been material to the Examiner.

Hitachi claims that it has demonstrated *prima facie* evidence of deceptive intent based on the involvement of Meehan and Spenard in overlapping prosecutions. I recognize that the fact of involvement in overlapping prosecutions for related subject matter gives Hitachi a leg-up in meeting its *prima facie* burden. I also take into account that Hitachi need not come forward with direct evidence of bad intent. Even in the case of co-pending applications, however, there must be more than the mere fact of knowledge and participation in both prosecutions to meet the *prima facie* standard. Fraud has a strong "intent" element, which requires evidence of purposeful conduct, not mere nondisclosure.

Several facts mitigate against a finding of deceptive intent on the present record. First, the same Examiner handled both the '735 and '738 applications. Although the law does not allow applicants to rest exclusively on this fact due to the busy dockets handled by Examiners,²⁴ it nonetheless points away from a finding of intent.²⁵ It would have been of little benefit to BorgWarner to withhold an application pending before the same Examiner.

²⁴ *Armour & Co. v. Swift & Co.*, 466 F.2d 767, 779 (7th Cir. 1972) (Examiners are busy and cannot be expected to remember the details of all files when reviewing particular applications).

²⁵ *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1457 (Fed. Cir. 1984) (Examiners have a duty to know the contents of files before them to ensure distinct inventions are claimed).

Second, Hitachi has also not pointed to any evidence which demonstrates that Messrs. Meehan or Spenard understood the materiality of the '735 application in relation to the '738 Patent. Mr. Meehan testified that his general practice was "to put the most relevant prior art references in the application itself and to discuss what they show and what they don't show, and then to supplement that with a list of other references that may have turned up in a search that I thought . . . were subject to disclosure." Motion Ex. 9, at 81. If material information came to his attention from his client, his general practice would be to "file it in that case" by submitting an information disclosure statement with the PTO. *Id.* at 89. And Meehan testified that, although it was his practice to make a conscious decision whether to cite a patentable reference,²⁶ he had no recollection why the '735 application was not disclosed in connection with the '935 Patent, the parent application for the '738 Patent. Reply Supp. Ex. 9, at 127.

Mr. Spenard testified that it was his general practice if he was prosecuting two VCT patent applications, and prior art came up in one case that was relevant to the second case, that he would cite it in the second case. *See* Opp. Ex. B, at 94. He does not recall, however, that scenario occurring when he was working on VCT patent applications for BorgWarner. *See id.* at 95. He also testified that it would be his practice to cite relevant co-pending applications. *See id.* at 122. Mr.

²⁶ Opp. Ex. C, at 127.

Spenard also had no recollection why the '735 Patent was not cited during prosecution of the '738 Patent. Reply Supp. Ex. 10, at 169-170. Thus, consistent with the Messrs. Meehan's and Spenard's general practice, one inference to be drawn is that neither individual determined that the '735 application was material to the '738 prosecution.

Finally, *in camera* review of the withheld documents did not suggest any intent to withhold by the attorneys.

In *For Your Ease Only, Inc. v. Calgon Carbon Corp.*, No. 02C7345, 2003 WL 1989611 (N.D. Ill. April 28, 2003), the district court was faced with a similar record, and concluded: "[w]hile it may be reasonable to infer from the above evidence that Calgon made a deliberate decision to withhold known, material references from the PTO, this is only one reasonable inference that may be drawn from the entire record." *Id.* at *10. See also *Marusiak v. Adjustable Clamp Co.*, No. 01C6181, 2002 WL 31886834, at 3 (N.D. Ill. Dec. 27, 2002). Where bad intent is only one of several inferences that can be drawn from the evidence, a *prima facie* showing of fraud necessary to vitiate the attorney-client privilege has not been established. Opp. at 21; Sur-Reply at 2; *Marusiak v. Adjustable Clamp Co.*, No. 01C6181, 2002 WL 31886834, at *3 (N.D. Ill. Dec. 27, 2002) (citing *Fuji Photo Film co. Ltd. v. Jazz Photo Corp. Inc.*, 173 F. Supp.2d 268, 276 (D.N.J.

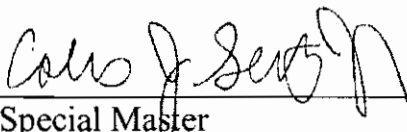
2001)). In this case nothing suggests an intent to withhold the '735 Patent application from the Examiner.²⁷

Based on the present record, Hitachi has not made a *prima facie* showing that, under the standards articulated in *In re Spalding Sports Worldwide, Inc.*, the attorney-client privilege should be vitiated based on the crime-fraud exception.²⁸

IX. CONCLUSION

Hitachi's Motion to Compel Production of Withheld Prosecution Documents is denied.

Dated: July 24, 2006


Special Master

²⁷ In *W.R. Grace & Co.-Conn. v. Viskase Corp.*, 1991 WL 150188 (N.D. Ill.), the district court ruled that the accused infringer established a *prima facie* case of fraud because the same attorneys prosecuted both the pending application and the application leading up to the undisclosed patent. There was no finding, however, that the same Examiner reviewed both applications. The decision may also be at odds with later Federal Circuit precedent in *In re Spalding Sports Worldwide, Inc.*, which requires some showing of deceptive intent as opposed to the possibility of mere negligence or carelessness.

²⁸ In light of my finding that intent has not been established, I need not address the reliance of the PTO with respect to the withheld references.